UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/617,088	07/14/2000	Seong Pyo Hong	0465-0719P	5584

7590 02/08/2005

Birch Stewart Kolasch & Birch LLP
P O Box 747
Falls Church, VA 22040-0747

EXAMINER	
BATTAGLIA, MICHAEL V	
ART UNIT	**PAPER NUMBER**
2652	

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/617,088	HONG ET AL.	
	Examiner	Art Unit	
	Michael V Battaglia	2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17,22,23,25-32 and 34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17,22,23,25-32 and 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 September 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 26-28 are objected to because of the following informalities. Claims 26-28 are dependent upon canceled claim 24. Claims 26-28 will be interpreted as if they were dependent upon claim 23 in the prior art rejections below. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-12, 14-17, 22, 23, 25-28, 30-32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fushimi et al (hereafter Fushimi) (US 6,088,307) in view of Tominaga (US 5,121,372).

In regard to claim 1, Fushimi discloses a track jump method performed on an optical recording medium on which a plurality of header areas having different phases are disposed between recordable data areas, which information for recognition of reference frequency is provided in wobbling shape on a track, to separate the data areas (Figs. 1, 4A and 4C), the track jump method comprising the steps of: receiving a track jump command; performing the track jump with inhibition of a phase locked loop (PLL) of a wobble signal; and resuming the PLL of the wobble signal when the track jump is completed (Col. 10, lines 30-51). Fushimi discloses a pickup head (Fig. 5, element 32), but does not disclose the steps of checking whether a current

location of the pickup head is the end of a header area when the track jump command is received, standing by without performing a track jump when the current location of the pickup head is not the end of the header area and performing the track jump when the current location of the pickup head is the end of the header area.

Tominaga discloses a track jump method performed on an optical recording medium, the track jump method comprising the steps of checking whether a current location of a pickup head (Fig. 3) is the end of a header area when the track jump command is received; standing by without performing a track jump when the current location of the pickup head is not the end of the header area and performing the track jump when the current location of the pickup head is the end of the header area (Figs. 8A-8D and Col. 3, line 63-Col. 4, line 19). Tominaga teaches that by avoiding header areas when track jumping, the tracking servo system will not become unstable (Col. 4, lines 18-19). It is noted that the claimed header areas are interpreted as reading on the preformat portions containing address information (Col. 1, lines 45-50) of Tominaga.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the track jump method of Fushimi to check whether a current location of the pickup head of Fushimi is the end of a header area when the track jump command is received; stand by without performing a track jump when the current location of the pickup head is not the end of the header area and perform the track jump when the current location of the pickup head is the end of the header area as suggested by Tominaga, the motivation being to perform a track jumping operation without losing stability of the tracking servo system.

In regard to claim 2, the checking step of Tominaga determines an off-point of a header mask signal indicating a header area as the end point of the header area (Figs. 8A-8D).

In regard to claim 3, Fushimi discloses that the PLL inhibiting step inhibits the PLL of the wobble signal and holds a PLL-wobble signal to a value obtained before the track jump is performed, during the track jump (Col. 10, lines 32-36).

In regard to claim 4, Fushimi discloses that the PLL inhibiting step slices a sum of optical reflected signals from the optical recording medium at a certain level to generate a header mask signal indicating a header area (Col. 7, lines 29-51).

In regard to claim 5, Fushimi discloses that the PLL inhibiting step slices a difference between optical reflected signals, which are divided in a track direction from the optical recording medium at a certain level to generate a header mask signal indicating a header area (Col. 7, lines 29-51).

In regard to claim 6, Fushimi discloses that the PLL inhibiting step counts wobble signals subjected to the PLL to generate a header mask signal indicating a header area (Col. 13, lines 23-45). It is noted that the claimed counting of wobble signals is interpreted as reading on the counting of pulses of the timing signal generation clock of Fushima because the frequency of timing signal generation clock is proportional to the frequency of the wobble signal (Fig. 8, element 55).

In regard to claim 7, Fushimi discloses that the PLL resuming step counts wobble signals subjected to the PLL to generate a header mask signal indicating a header area when the track jump is completed (Col. 13, lines 23-45). It is noted that the PLL resuming step puts the system back into normal functioning, which causes the header mask signal generation in the normal fashion. It is noted that the claimed counting of wobble signals is interpreted as reading on the counting of pulses of the timing signal generation clock of Fushima because the frequency of

timing signal generation clock is proportional to the frequency of the wobble signal (Fig. 8, element 55).

In regard to claim 8, Fushimi discloses that the PLL inhibiting step inhibits the PLL of the wobble signal in a section in which a header mask signal is on (Col. 11, lines 10-15 and Col. 13, lines 23-45).

In regard to claim 9, Fushimi in view of Tominaga discloses the method of claim 1. Fushimi does not disclose that the PLL resuming step terminates the track jump before a point at which a header mask signal indicating a header area is turned on. It is noted that the PLL resuming step completes the track jump returns the Fushimi system to normal functioning.

Tominaga teaches that finishing a track jump with enough time left for the system to return to normal or settle before the next header area comes and the header masking signal is turned on will keep the system from becoming unstable (Col 4, lines 17-19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the PLL resuming step of Fushimi to terminate the track jump before a point at which a header mask signal indicating a header area is turned on as suggested by Tominaga, the motivation being to allow the system to settle and return to normal before the next header area, thereby maintaining stability.

In regard to claim 10, Fushimi discloses a track jump method performed on an optical recording medium on which a plurality of header areas having different phases are disposed between recordable data areas to separate the data areas (Figs. 1, 4A and 4C), the track jump method comprising the steps of: receiving a track jump command and performing the track jump while inhibiting a phase locked loop (PLL) of a wobble signal (Col. 10, lines 30-51). Fushimi discloses a pickup head (Fig. 5, element 32), but does not disclose the steps of: checking whether a

current location of the pickup head is a header area when the track jump command is received; and performing a track jump when the header area ends as a result of the checking step and standing by without performing the track jump until the header area ends if the current location of the pickup head is the header area as a result of the checking step.

Tominaga discloses a track jump method performed on an optical recording medium, the track jump method comprising the steps of: checking whether a current location of the pickup head is a header area when the track jump command is received; and performing a track jump when the header area ends as a result of the checking step and standing by without performing the track jump until the header area ends if the current location of the pickup head is the header area as a result of the checking step (Figs. 8A-8D and Col. 3, line 63-Col. 4, line 19). Tominaga teaches that by avoiding header areas when track jumping, the tracking servo system will not become unstable (Col. 4, lines 18-19). It is noted that the claimed header areas are interpreted as reading on the preformat portions containing address information (Col. 1, lines 45-50) of Tominaga.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the track jump method of Fushimi to check whether a current location of the pickup head of Fushimi is a header area when the track jump command is received; and perform the track jump when the header area ends as a result of the checking step and stand by without performing the track jump until the header area ends if the current location of the pickup head is the header area as a result of the checking step as suggested by Tominaga, the motivation being to perform a track jumping operation without losing stability of the tracking servo system.

In regard to claim 11, Tominaga discloses that the checking step determines a falling point of a header mask signal indicating an end point of the header area (Figs. 8A-8D).

In regard to claim 12, Tominaga discloses that the track jump performing step ends before a rising point of a header mask signal indicating a header area (Col. 4, lines 17-19).

In regard to claim 14, Fushimi discloses a track jump method performed on a disc on which a plurality of header areas having different phases are disposed between recordable data areas, in which information for recognition of reference frequency is provided in wobbling shape on a track, to separate the data areas (Figs. 4A and 4B), the track jump method comprising the steps of: performing a track jump and inhibiting a phase locked loop (PLL) of a wobble signal when a track jump command is received; and resuming the PLL of the wobble signal when the track jump is completed (Col. 10, lines 30-51). Fushimi does not disclose that the track jump is started at a point where a header area ends.

Tominaga discloses starting a track jump at a point where a header area ends and teaches that doing so the tracking servo system does not become unstable (Figs. 8A-8D and Col. 3, line 63-Col. 4, line 19). It is noted that the claimed header areas are interpreted as reading on the preformat portions containing address information (Col. 1, lines 45-50) of Tominaga.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the track jump method of Fushima to start a track jump at a point where a header area ends as suggested by Tominaga, the motivation being to start a track jump in a manner in which the tracking servo system does not become unstable.

In regard to claim 15, Fushimi discloses that a PLL inhibiting step inhibits the PLL of the wobble signal and holds a PLL-wobble signal to a value obtained before the track jump is performed, during the track jump (Col. 10, lines 32-36).

In regard to claim 16, in the track jump method Fushimi in view of Tominaga, the track jump is started at a point where a header area ends when the track jump command is input (see

rejection of claim 14 above). Therefor, if a PLL inhibiting step starts the track jump when a track jump command is input, the PLL inhibiting step will start the track jump at a point where a header area ends.

In regard to claim 17, Fushimi discloses that a PLL inhibiting step inhibits the PLL of the wobble signal in a section in which a header mask signal is on (Col. 11, lines 7-19).

In regard to claim 22, Fushimi discloses a track jump method for an optical recording medium on which a plurality of header areas having different phases are disposed between data areas wherein the track jump is started while a phase locked loop (PLL) of a wobble signal is inhibited (Col. 10, lines 30-31 and Figs. 4A and 4B). Fushimi discloses a pickup head (Fig. 5, element 32), but does not disclose that the method comprises the steps of: (a) checking whether a current location of the pickup head is the end of a header area when a track jump command is received; and (b) starting the track jump when the current location of the pickup head is the end of the header.

Tominaga discloses a track jump method for an optical recording medium, the method comprising the steps of: (a) checking whether a current location of a pickup head is the end of a header area when a track jump command is received; and (b) starting the track jump when the current location of the pickup head is the end of the header (Figs. 8A-8D and Col. 3, line 63-Col. 4, line 19). Tominaga teaches that by avoiding header areas when track jumping, the tracking servo system will not become unstable (Col. 4, lines 18-19). It is noted that the claimed header areas are interpreted as reading on the preformat portions containing address information (Col. 1, lines 45-50) of Tominaga.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the track jump method of Fushimi to check whether a current location of

the pickup head of Fushimi is the end of a header area when a track jump command is received and start the track jump when the current location of the pickup head is the end of the header as suggested by Tominaga, the motivation being to perform a track jumping operation without losing stability of the tracking servo system.

In regard to claim 23, Tominaga discloses that the step (a) determines an off-point of a header mask signal indicating a header area as the end point of the header area (Figs. 8A-8D).

In regard to claim 25, Fushimi discloses a further step (c) that resumes a PLL of the wobble signal when the track jump is complete (Col. 10, lines 30-51).

In regard to claim 26, Fushimi discloses that the step (b) inhibits the PLL of the wobble signal and holds a PLL-wobble signal to a value obtained before starting of the track jump (Col. 10, lines 32-36).

In regard to claim 27, Fushimi discloses that the step (b) counts wobble signals subjected to the PLL to generate a header mask signal indicating a header area (Col. 13, lines 23-45). It is noted that the counting pulses of the timing signal generation clock of Fushima read on the claimed counting wobble signals because the frequency of timing signal generation clock is proportional to the frequency of the wobble signal (Fig. 8, element *55*).

In regard to claim 28, Fushimi discloses that the step (b) inhibits the PLL of the wobble signal in a section in which a header mask signal is on (Col. 11, lines 10-15 and Col. 13, lines 23-45).

In regard to claim 30, Fushimi discloses a track jump method for an optical recording medium on which a plurality of header areas having different phases are disposed between data areas, wherein a phase locked loop (PLL) of a wobble signal is inhibited during the track jump (Col. 10, lines 30-51 and Figs. 4A and 4B). Fushimi discloses a pickup head (Fig. 5, element 32),

but does not disclose that the method comprises the steps of: (a) checking whether a current location of the pickup head is the end of a header areas when a track jump command is received; and (b) determining whether to start the track jump based on the checking step (a) wherein the track jump is started when the header area ends.

Tominaga discloses a track jump method for an optical recording medium, the method comprising the steps of: (a) checking whether a current location of the pickup head is the end of a header areas when a track jump command is received; and (b) determining whether to start the track jump based on the checking step (a) wherein the track jump is started when the header area ends (Figs. 8A-8D and Col. 3, line 63-Col. 4, line 19). Tominaga teaches that by avoiding header areas when track jumping, the tracking servo system will not become unstable (Col. 4, lines 18-19). It is noted that the claimed header areas are interpreted as reading on the preformat portions containing address information (Col. 1, lines 45-50) of Tominaga.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the track jump method of Fushimi to check whether a current location of the pickup head of Fushimi is the end of a header areas when a track jump command is received; and determine whether to start the track jump based on the checking step wherein the track jump is started when the header area ends as suggested by Tominaga, the motivation being to perform a track jumping operation without losing stability of the tracking servo system.

In regard to claim 31, Tominaga discloses that the track jump is started when the current location is the end of the header as a result of the step (a) (Figs. 8A-8D).

In regard to claim 32, Tominaga discloses that the step (a) determines an off-point of a header mask signal indicating a header area as the end point of the header area (Figs. 8A-8D).

In regard to claim 34, Fushima discloses that the track jump method further comprises a step (c) resuming a PLL of the wobble signal when the track jump is completed (Col. 10, lines 30-51).

3. Claim 13 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fushimi in view of Tominaga as applied to claim 10 and 25 above, and further in view of Alon et al (hereafter Alon) (US 5,210,726).

In regard to claim 13, Tominaga discloses that when an N-time consecutive track jump command is received, a procedure of starting the track jump at a falling edge of a header mask signal, ending the track jump before a rising edge of the header mask signal, and turning on a servo (Col. 4, lines 5-19). Tominaga does not disclose that the procedure is repeated N times.

Alon discloses reading an address from a header area for each track the optical head moves across in an N-time consecutive track jump and teaches that doing so allows the optical head to be surely and accurately repositioned (Col. 1, lines 61-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for the track jump method of Fushimi in view of Tominaga to read an address from a header area for each track the optical head moves across in an N-time consecutive track jump as suggested by Alon, the motivation being to surely and accurately reposition the optical head. It is noted that for the track jump method of Fushimi in view of Tominaga to read an address from each track, the track jump procedure of Tominaga would have to be repeated N-times, one for each track.

In regard to claim 29, Fushimi in view of Tominaga as applied to claim 25 discloses using a header signal indicating a header area does but does not disclose that the step (c) maintains the track jump until a point at which a header mask signal indicating a header area is turned on.

Alon discloses reading the address of a target track during a track jump and teaches that doing so will allow the optical head to be surely and accurately repositioned (Col. 1, lines 61-65). It is noted that if the address of the target track is read in a track jump, then the track jump has been maintained at least until the beginning of a header area and the turning on of a header mask signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made for step (c) of the track jump method of Fushimi in view of Tominaga maintain the track jump until a point at which a header mask signal indicating a header area is turned on as suggested by Alon, the motivation being so that the address in the header of the target track is read and the optical head surely and accurately repositioned.

Response to Arguments

4. Applicant's arguments filed September 27, 2004, with regard to Fushimi et al (hereafter Fushimi) (US 6,088,307) not performing a track jump with inhibition of a PLL of a wobble signal, have been fully considered but they are not persuasive. Fushimi discloses (Col. 10, lines 30-43) that during a track jump, the PLL (Fig. 6, element *55*) no longer receives a wobble signal and instead receives a clock signal (Fig. 6, element CLK0) generated by a reference oscillator and divided by frequency dividing circuit (Fig. 6, element *57*). A track jump is performed in the method of Fushimi with inhibition of a PLL of a wobble signal because the PLL does not receive the wobble signal during a track jump.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael V Battaglia whose telephone number is (703) 305-4534. The examiner can normally be reached on 5-4/9 Plan with 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Battaglia

Michael Battaglia

HOA T. NGUYEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600
2/7/05